

REMARKS

This Application has been carefully reviewed in light of the Final Office Action mailed October 30, 2008, and the Advisory Action mailed February 27, 2009. Claims 6-20 are pending in this Application. Claims 6-20 stand rejected under 35 U.S.C. § 112, second paragraph. Claims 1-5 were previously canceled. Claims 6, 15, 18, and 19 are herein amended. Applicant respectfully requests reconsideration and favorable action in this case.

Rejections under 35 U.S.C. § 112

Claims 6-20 were rejected by the Examiner under 35 U.S.C. § 112, second paragraph, as being indefinite and failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

The Examiner stated in the Final Office Action that “it is unclear how there can be real time cross communication [between LF1 and LF4] if a signal [from LF1] cannot reach LF4 without going through another control unit (LF3) first.” Applicant understands the Examiner to say that because control functional units LF1 and LF4, as depicted in the exemplary embodiment of Figure 1, are connected serially (or in a daisy-chain topology), real time communication between one control functional unit (e.g., LF1) cannot be “simultaneously transmitted” to all of the other control functional units (including LF4) as previously claimed.

Although Applicant disagrees with the Examiner’s position, in order to reduce the time and cost associated with obtaining patent protection, Applicant has amended Claims 6, 15, 18, and 19 to recite a “network interconnecting said control functional units for real time cross-communication there between, whereby information relating to movement control from any one of said control functional units is transmitted in real time to all of the other of said control functional units.” As Applicant pointed out in the Response to Final Office Action, “whatever qualifies for real-time depends on the respective process. Thus, even if information on Q3 is passed through LF1 to be forwarded on Q1, this still could fulfill real-time specification if the pass through of data is fast enough.” Response to Final Office Action at 7.

In other words, one of ordinary skill in the art would understand that the real time cross-communication network claimed in Claims 6, 15, 18, and 19 does not require any specific network topology. Rather, it can be any type of network between control functional units (LF1-LF4) that meets the real-time requirements of the specific application or process. *Real-Time Systems*, by Halang and Sacha (World Scientific 1992) confirms that one of ordinary skill in the art would so understand:

Some prevailing misconceptions . . . about real-time systems need to be overcome: neither time-sharing nor systems which are merely fast are necessarily real-time systems. Commencing the processing of tasks in a timely fashion is much more significant than speed. The thinking in probabilistic or statistical terms . . . is as inappropriate in the real-time domain as is the notion of fairness for the handling of competing requests, or the minimization of average reaction times as an optimality criterion of system design. Instead, worst cases, deadlines, maximum run-times, and maximum delays need to be considered.

Exhibit A at 17 (attached hereto). Further, Halang and Sacha confirm that any concurrency requirements of a real-time system are specific to the application or process in which the system is used: "The requirement for concurrent processing results from internal characteristics of the problem itself" Exhibit A at 15.

Thus, one of ordinary skill in the art would understand the scope of the "network interconnecting said control functional units for real time cross-communication" claimed in Claims 6, 15, 18, and 19 to include any network, regardless of topology or inherent latencies between control functional units, that is capable of real time communication in the particular process in which it is used. In fact, as to the exemplary network disclosed in Figure 1, one of ordinary skill in the art would understand that a network for real time cross-communication could be made up of nodes (e.g., control functional units) interconnected in a serial or daisy-chain topology. For example, a person of ordinary skill in the art of networking would know of the FieldBus real-time network system/specification that has been around since the late 1980s, and which allows for daisy-chained network topologies.

Likewise, the Examiner's remarks in the Office Action of May 1, 2008, further confirm that one of ordinary skill in the art would understand that a serial or daisy-chain network is capable of real time cross-communication. Specifically, the Examiner concluded

that the *Tokiwa* reference discloses “a second independent network interconnecting said control functional units for real time cross-communication there between, whereby information relating to movement control from any one of said control functional units is simultaneously transmitted to all of the other of said control functional units.” Office Action at 4. The Examiner further recognized that the network in *Tokiwa*, comprising elements “#11, #12, #13, and #14 are serially connected.” *Id.* at 4-5. The Examiner concluded that this serial network “can be interpreted as a second network” as claimed in Claims 6, 15, 18, and 19. ***Thus, the Examiner himself has equated a serial network with a network for real time cross-communication.***

Even further, Applicants’ specification confirms that the serial or daisy-chain network disclosed in Figure 1 is an exemplary network for real time cross-communication. The specification, specifically states:

Cross-communication Q1 to Q3 is a data link with real-time capability and thus ensures that essential information is available at all movement control points simultaneously. This includes, for example, synchronization and error signals, and signals which necessitate immediate action.

Specification, page 6, paragraph 16. Moreover, the specification states:

The cross-communication Q1 to Q3 in real-time means that all the control functional units LF1 to LF4 have this information at the same time. Once a fault has been identified and a counter measure has been initiated, this leads to an immediate reaction at the same time in the drive groups. This advantageously allows an improved printed product quality to be achieved.

Since all the control functional units LF1 to LF4 are connected by means of real-time cross-communication Q1 to Q3, this ensures that all the information relating to movement control is available all the time throughout the system.

Specification, page 7, paragraph 18-19. Hence, the specification specifically states that all control functional units LF1 to LF4 are connected by means of real-time cross-communication Q1 to Q3, which thus establishes a network between the control functional units LF1 to LF4.

Section 2173.02 of the Manual of Patent Examining Procedure indicates that “[i]n reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent.” For the foregoing reasons, Applicant respectfully submits that this standard is met here, and that Claims 6, 15, 18, and 19 are not indefinite as the Examiner previously concluded. Thus, Applicant believes that all independent claims 6, 15, 18, and 19 *do* particularly point out and distinctly claim the present invention. Accordingly, Applicants respectfully request reconsideration and allowance of independent claims 6, 15, 18, and 19, as well as all claims that depend therefrom.

CONCLUSION

Applicant has now made an earnest effort to place this case in condition for allowance in light of the remarks set forth above. Applicant respectfully requests reconsideration of all pending Claims.

Applicants enclose a Request for Continued Examination and authorize the Commissioner to charge \$810.00 (RCE fee) and \$1,110 (Three Month Extension of Time fee) to Deposit Account No. 50-4871 of King & Spalding LLP. Applicant believes no additional fees are due; however, should the Commissioner deem that any additional fees are due, including any fees for additional extensions of time, the Commissioner is hereby authorized to debit such fees from Deposit Account No. 50-4871, reference 071308.0171.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512-457-2030.

Respectfully submitted,
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